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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/266,202	03/10/1999	HARIKLIA DRIS REITZ	2950.08US02	5465

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EXAMINER

LEE, KYUNG S

ART UNIT

PAPER NUMBER

2832

DATE MAILED: 01/16/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/266,202

Applicant(s)

REITZ ET AL.

Examiner

Richard K. L. e

Art Unit

2832

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 August 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-5, 7-9 and 25-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9 and 25-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Applicants cancelled claims 31-35. Claims 1-5, 7-9 and 25-30 are pending in the current application.

#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bhargava (5,455,489) in view of Jaskie (5,442,254).

Bhargava teaches group II-VI host phosphors, including ZnO, ZnS and Y<sub>2</sub>O<sub>3</sub> (col. 2, lines 4-32) which may be suitable for quantum contained phosphors. Bhargava teaches the claimed invention except for particles size range as claimed.

Jaskie teaches a device comprising phosphor particles having an average diameter of less than 100 nm (abstract) wherein the particle size is selected as desired. Jaskie further teaches that the specification of a desired particle range is within the skill of the art (col. 7, lines 34-40). Jaskie teaches the claimed invention except for the range of the phosphor particles.

It would have been obvious to specify a desired particle range since the specification of a desired particle range is recognized to be within the skill of the art.

Regarding claims 2-5 and 25-26, Jaskie teaches in col. 6, lines 46-49, the particle size of approximately 5nm. Such range meets the limitation of "a diameter greater than about three times the average diameter..."

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2. Claims 1, 7-9 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iga et al. (5,770,113) in view of Jaskie.

Iga et al. teaches a varistor formed with powdered ZnO particles having the average particle size of 50 nm to 500 nm (col. 10, lines 3-35). Iga et al. teaches a stoichiometry of ZnO and ZnO<sub>2</sub>. Further, the metal oxide of Iga et al. includes Bi<sub>2</sub> O<sub>3</sub>. Iga et al. teaches the claimed invention except for the particle distribution range as claimed (claim 1).

Jaskie teaches a device comprising phosphor particles having an average diameter of less than 100 nm (abstract) wherein the particle size is selected as desired. Jaskie further teaches that the specification of a desired particle range is within the skill of the art (col. 7, lines 34-40). Jaskie teaches the claimed invention except for the range of the phosphor particles.

It would have been obvious to specify a desired particle range since the specification of a desired particle range is recognized to be within the skill of the art.

Jaskie teaches in col. 6, lines 46-49, the particle size of approximately 5nm. Such range meets the limitation of "a diameter greater than about three times the average diameter..."

### *Response to Arguments*

3. Applicant's arguments filed 8/20/2001 have been fully considered but they are not persuasive.

Applicants argue that "Since Bhargava patent does not teach or suggest zinc oxide, it is not relevant to the present rejection." The examiner respectfully disagrees. Kittle's (Introduction to Solid State Physics, submitted by Applicants) II-VI compound would include zinc sulfide, cadmium sulfide and zinc oxide (copy of a period table enclosed).

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Applicants argue that Jaskie does not describe a range of particle sizes. The examiner disagrees. Jaskie teaches a device comprising phosphor particles having an average diameter of less than 100 nm (abstract) wherein the particle size is selected as desired. Jaskie teaches in col. 6, lines 46-49, the particle size of approximately 5nm. Such range meets the limitation of “a diameter greater than about three times the average diameter...”

Applicants argue that Jaskie patent “had failed to establish an appropriate approach for the production” since he employs “wet filtration” in contrast to “Applicants’ particle production approach ...” Pending claims 1-7, 7-9 and 25-30, however, do not recite any production steps nor any specific methods.

### *Conclusion*

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Richard K. Lee whose telephone number is (703) 306-9060. The examiner can normally be reached on 6:30 AM to 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (703) 308-7619. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7724 for regular communications and (703) 308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.

RKL

January 14, 2002

  
KARL D. EASTROM  
PRIMARY EXAMINER